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LAGNIAPPE

John C. Stennis Space Center

June 23, 1998



NASA Administrator Dan Goldin talks with Commercial Remote Sensing Program Manager David Brannon and U.S. Congressman Chip Pickering, R-Miss., at the recent Congressional Technology Showcase in Washington, D.C. Pictured from left are Brannon, Pickering and Goldin. The showcase, held Wednesday, June 10 at the Rayburn Office Building, was to familiarize members of Congress with the advanced technologies being developed at the NASA centers. Each of NASA's four enterprises: Aeronautics, Human Exploration and Development of Space, Earth Science and Space Science, were represented. Several hundred people attended the one-day exhibition.

New tests begin for X-33 engines at Stennis Space Center

NASA is performing the second major test series at Stennis Space Center in preparation for testing the XRS-2200 Linear Aerospine Engine and power pack assembly for the X-33.

The X-33 is a half-scale technology demonstrator prototype of a reusable launch vehicle, which Lockheed Martin has named VentureStar and plans to develop early in the next century.

The series began May 29 to calibrate a new 12-inch liquid hydrogen flowmeter at the A-1 test stand, where the aerospine will be tested this fall. Each test emits a hydrogen flame up to 400 feet high from the test stand's flare stack. The height of the flame and resulting thermal updraft required NASA to obtain permission from the Federal Aviation Administration.

"In addition to calibrating the flowmeter, this test series enables us to evaluate the performance of the power pack hydrogen discharge flare stack at maximum operating conditions prior to installing the power pack," NASA's Mike Mims, A-1 test director, said.

The tests simulate the same flow rate that will be produced by the aerospine's power pack assembly. The power pack will include liquid oxygen and fuel pumps, the gas generator, valves and actuators.

Through demonstration flights and

ground research, the X-33 will provide information needed for industry to decide by the year 2000 whether to proceed to the development of a full-scale vehicle. Expected to dramatically reduce the cost of access to

space, development of this vehicle will allow for a whole new range of space business and science endeavors.

X-33 test flights will begin in mid-1999. It will launch from Edwards Air Force Base.



On Friday, May 29, a 400-foot flame was shot into the air near the A-1 test stand as Stennis personnel prepare for tests on the power pack assembly for the X-33.

LAGNIAPPE Commentary

Home of the Brave...

The glowing coals in the belly of my Memorial Day grill were just about ready. They were fiery hot, maybe too hot for the Cajun and Polish sausage I had laid out on the rickety old fish cleaning scaffold under the backyard live oak tree where I was preparing to cook. The fresh grouper, shrimp and snapper shish kebab would have to wait until last anyway.

I had retreated to my antique, woven hammock up on the back porch to await the right moment to begin the annual ritual. I wondered just how old the hammock was. I think I bought it way back in the 1960s from a friend over in Biloxi who made cast nets for mullet. I do know it survived Hurricane Camille in 1969.

I was reading "Milo Talon," a Louis L'Amour western classic and listening to Patsy Cline on my eight-track lo-fi. Well, I thought, "It doesn't get any better than this."

"Hey, Mack of boy, whatcha got cooking?"

Oh, lord, it was Gator. What an inopportune time for one of his visits, I thought to myself. Might as well make the best of it.

"Pull up that plastic yard chair, Gator, and take a load off," I said to my old friend. "What are you doing down in this neck of the woods?"

"I went to the Memorial Day Ceremony over at the Biloxi National Cemetery, of course," Gator proudly answered. "Why weren't you there?"

I knew that Gator took his patriotism seriously. And I really didn't have a good excuse for not showing up for a public ceremony. After all, every eligible member of my family and most of my friends had served our country in support of peace and freedom. A few of my friends and close family members had given their lives so that the rest of us could enjoy such things as this holiday cookout.

"You know, old pal," Gator remarked sadly, "there weren't very many people over there for the ceremony. The beaches were packed with people having a good time. I'll bet most didn't even know what the holiday was all about."

Gator doesn't get serious very often, so I knew he felt strongly about the matter. He was right, too. Of all of our holidays, the people of this country certainly ought to pause and pay solemn tribute to our military heroes. If it had not been for their bravery, we wouldn't have had a space program for the past 40 years, an Indianapolis 500, an NBA playoff or even a peaceful afternoon to grill out in the backyard.

And I thought, too, about all our friends out here at Stennis Space Center involved in military endeavors. Why, they would be out there on the front in a heartbeat if they were called.

"I got to be going," Gator said as he got up from his chair to leave. "I'm going to the Legion Hall to see some of my old buddies."

"Wait up, Gator, douse this fire, and I'll go with you. I need to say thanks to some of those guys down there!" M.R.H.



NASA NEWSCLIPS

Mott leaves NASA—Mike Mott, NASA Associate Deputy Administrator (Technical), has announced his plan to leave NASA to join Boeing Space Transportation, Seal Beach, Calif., as Vice President, Business Development.

Mott, one of the Agency's top three managers, has served the NASA Administrator since January 1994.

"Mike has been a valuable asset to NASA, and his contributions will be sorely missed," Administrator Daniel Goldin said. "We wish him the best of luck in his new position. It has been an honor to work with him."

Mott served in the United States Marine Corps in numerous operational and staff assignments throughout the United States and the western Pacific. He graduated from the U.S. Naval Test Pilot School, participated in 89 major flight test projects, and commanded Marine Aircraft Group Forty One at Andrews Air Force Base. He accumulated more than 3,800 flight hours in 62 types of aircraft and made 210 carrier landings.

NASA seeks cure for diabetes—Results from a 1994 insulin crystal growth experiment in space are leading to a new understanding of diabetes—a hormone deficiency disease. This research has the potential to significantly reduce expensive treatments, since treatment of diabetes accounts for one-seventh of the nation's health care costs. Sixteen million Americans suffer from hormone deficiency diseases such as diabetes, hepatic failure, hemophilia, Parkinson's and Huntington diseases.

"The space-grown insulin crystals have provided us new, never-before-seen information," said Dr. G. David Smith, scientist at Hauptman-Woodward Medical Research Institute, Buffalo, N.Y.

Because of the increase in crystal size, Smith's team is able to study in more detail the delicate balance of the insulin molecule. Natural insulin molecules hold together and gradually release into the human body. With some of the new and unexpected findings, researchers may be able to improve how insulin is released from its inactive stored state to its active state.

SSC enters next stage of ISO 9001

Stennis Space Center will enter the next stage of its ISO 9001 registration effort June 23-25. During this time, representatives from third-party registrar Det Norske Veritas (DNV), will conduct an on-site preassessment to determine if Stennis is complying with the 20 elements of ISO 9001.

ISO 9001 represents an improved international standard for quality management.

Stennis's ISO program manager Nick Cenzi is responsible for ensuring that Stennis Space Center's quality system is established, implemented and maintained in accordance with that standard.

Preparation for this upcoming preassessment has focused heavily on the content of written procedures, mainly the SSC Customer Service Manual, System Level Procedures, and both NASA and contractor work instructions.

Emphasis has been placed on four main areas:

- 1) identifying processes,
- 2) making sure written procedures and actual practices match,
- 3) eliminating or controlling obsolete procedures,
- 4) and developing new procedures.

SSC's basic concept for ISO is Say It-Do It-Prove It. These main goals are to: establish written procedures (say how work is to be done); follow those procedures (do the work as it is written); keep records of work (prove that the procedures have been followed).

Two DNV assessors will spend three days assessing the effectiveness of Stennis' Quality Management System. The audit will essentially be a dress rehearsal to prepare for the actual registration audit scheduled for December.

"We want to do our best to demonstrate our ability to meet or exceed the requirements of this internationally recognized business standard," Cenzi said.

NASA Center Director Roy Estess, along with Johnson Controls World Services and Lockheed Martin Stennis Operations general managers, have established a joint ISO 9001 Matrix Organization, responsible for developing all plans, strategies, schedules and activities required to achieve ISO 9001 registration. This team is comprised of facilitators, ISO champions and internal auditors. Team membership and additional ISO information is located at www.ssc.nasa.gov/fsc9000.



This is an animated view of the International Space Station after assembly is well under way. Assembly is scheduled to begin in November with the launch of the Control Module.

Shuttle-Mir era comes to a close

Target launch dates set for Space Station

Commander Charlie Precourt and Pilot Don Gorie brought Discovery down to a perfect landing at 1 p.m. CDT June 12. On board the Space Shuttle was Mission Specialist Andy Thomas who is back on Earth after spending four and a half months on board the Russian Space Station Mir. This landing culminates 977 total days spent in orbit by the seven U.S. astronauts who stayed aboard Mir since the Shuttle-Mir program began. Of those, 907 days were spent as actual Mir crew members. This landing marks the end of an 812-day continuous U.S. presence in space.

The next time U.S. astronauts and Russian cosmonauts travel into orbit together they will arrive in space as a team.

"No way can we stop the cooperation that's started with the (shuttle-Mir) program," Precourt said. "We've got to keep going together into the future, and we're really happy to be leaping off in that direction."

Frank Culbertson, director of NASA's shuttle-Mir program, said that he feels the trips to Mir have given us much needed experience for the International Space Station.

"One of the main things that Phase 1 has given us is the ability to work on problems together," Culbertson said.

International Space Station Assembly to begin

Representatives of all nations involved in the International Space Station have agreed to officially target a November 1998 launch for the first station component and to revise launch target dates for the remainder of the 43-flight station assembly plan.

In meetings of the Space Station Control Board and the Heads-of-Agency in late May at the Kennedy Space Center, all station partners agreed to target launch dates of Nov. 20 for the Control Module named Zarya (Russian word for sunrise) and Dec. 3 for shuttle mission STS-88 with Unity (Node 1). Changes in the construction schedule for the third station component, the Russian-provided Service Module, led the partners to reschedule the first assembly launches. The Service Module will house the first station occupants and the European Space Agency-provided Data Management System.

Although the new dates move the launch of the first station component, Zarya, from June to November, the target dates agreed upon for many major station milestones during the latter portions of the five-year assembly plan changed little. In addition, several enhancements to the station's assembly have been made, including an exterior "warehouse" for spare parts and a Brazilian-provided carrier for exterior station components that are launched aboard the Space Shuttle.

1998 hurricane season began June 1

June is upon us, and once again the Gulf Coast must begin the six-month vigil known as hurricane season.

Officials with the National Hurricane Center keep a close eye for tropical storm development in the Atlantic Ocean, Caribbean Sea and the Gulf of Mexico from June 1 through November 30.

The peak of hurricane season comes mid-August through October, with most hurricanes making landfall in September. Hurricanes Andrew and Camille were August storms.

November hurricanes are possible due to the cooling of the warm water in the Atlantic Ocean.

To help determine whether you are ready for a hurricane, here are some important elements of a hurricane plan:

1. Have a safe place to ride out the storm.
2. Have a plan for protecting your property.
3. Devise a way to store water for use after a hurricane. Water systems may become contaminated and undrinkable.
4. Don't be confused about hurricane terms. Know the different stages of hurricane development.

A **tropical disturbance** is a system of clouds, showers and thunderstorms in the tropics that maintains its identity for 24 hours or more.

A **tropical depression** is a tropical disturbance that develops closed circulation (counterclockwise winds around a center of low pressure) with maximum sustained winds of 39 mph or less.

A **tropical storm** is a system given a name by the National Hurricane Center and has maximum sustained winds of 39 to 74 mph.

A **hurricane** has sustained winds of at least 74 mph, but winds can be much stronger. Hurricanes are categorized on a scale of 1 to 5 based on wind speed, barometric pressure and destructive potential.

Forecasters issue a **Hurricane Watch** when a tropical storm or hurricane may threaten an area within 24 to 36 hours. **Hurricane Warnings** indicate that a tropical storm or hurricane will strike land within 24 hours.

When tropical storm or hurricane conditions threaten the Mississippi coast, Stennis Space Center has four warning

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Rep. Mark Formby, R-Pearl River, (left) presents Dr. David Powe, chief of the Stennis Education and University Affairs Office, with a legislative proclamation as Stennis Space Center Director Roy Estess looks on. The Mississippi State Legislature honored the Education and University Affairs Office for its work to improve education in Mississippi.

Education Office honored by state leaders

The Mississippi State Legislature recently honored the NASA/Stennis Space Center Education and University Affairs Office with a legislative proclamation. Rep. Mark Formby, R-Pearl River, presented the proclamation to Dr. David Powe, chief of the Education and University Affairs Office, May 18.

The resolution also recognized the education office for developing an "interactive, customer-driven development process," which has been proven effective through the successful implementation of the Tri-State Education Initiative (TSEI).

In addition, the legislature commended Stennis Space Center and TSEI for creating a global model for replication that is affecting not only Mississippi, but the entire nation and world, establishing Stennis Space Center as a leader in the use and training of emerging technology.

TSEI is a partnership between NASA, state, local and other federal agencies that is fully consistent and supportive of the National Education Goals.

The resolution states that the legislature commends and congratulates the Education and University Affairs Office "as a shining example of how government and the private sector can work together for their mutual benefit and for the betterment of society as a whole."

The resolution was drafted by Formby; Rep. J.P. Comprieta, D-Hancock County; Rep. Dirk Dedeurwaer, D-Hancock, Harrison, Pearl River and Stone counties; and Rep. Herb Frierson, D-Forrest, Leflore, and Pearl River counties.

"I continue to be proud of what Stennis represents both locally and nationally," Formby said during the presentation.

Earlier, the Education and University Affairs Office also received a commendation from Mississippi Lt. Gov. Ronnie Magee for completion of a successful Businesses Influencing Generations Program during the 1998 academic school year.

Environmental Office to hold information sessions

NASA's Environmental Office will hold an informational session for Stennis Space Center employees on Thursday, June 25 to share information about two environmental cleanup areas at the center.

The session will be held from 11 a.m. to 1 p.m. in the Atrium of Building 1100. All Stennis employees are invited to attend.

According to NASA's environmental officer at Stennis, Ronald Magee, NASA has completed its evaluation of the two cleanup areas—one next to Building 2205

and the other next to the Cypress House. The informational session is designed to answer questions Stennis employees may have about the cleanup sites.

Written comments on the proposed cleanup plans for these areas should be sent to NASA's Environmental Officer, Ronald Magee (Code RA00, Building 1100) by July 18.

A public information session will be held from 6-8 p.m. June 25 at the Hancock County Library, located on Highway 90 in Bay St. Louis.

New techniques used in computer modeling

Engineers with Stennis Space Center's Propulsion Test Directorate are using new techniques in computer modeling to design and analyze modifications to the facilities used in testing new rocket propulsion systems.

NASA engineers Randy Holland and Jim Ryan brought on-line the new software that provides the capability for using Dynamic Fluid Flow Modeling techniques at Stennis. The new modeling method has since supported testing of composite fuel tanks, turbopumps, hybrid rocket motors and for the X-33 and Low Cost Technologies project.

Since the Stennis installation, Holland has managed the modeling efforts for the new E-1 ultra high-pressure test facility and the addition of a control simulation capability.

The modeling software, called EASY/ROCETS, combines a commercial package marketed by Boeing Computer Services called EASY5a with Pratt & Whitney's ROCETS (ROCKET Engine Transient Simulator) modules, developed under a Marshall Space Flight Center contract. The software allows an engineer to obtain good models of physical systems, such as propulsion test facilities, without needing a great deal of numerical analysis and simulation expertise.

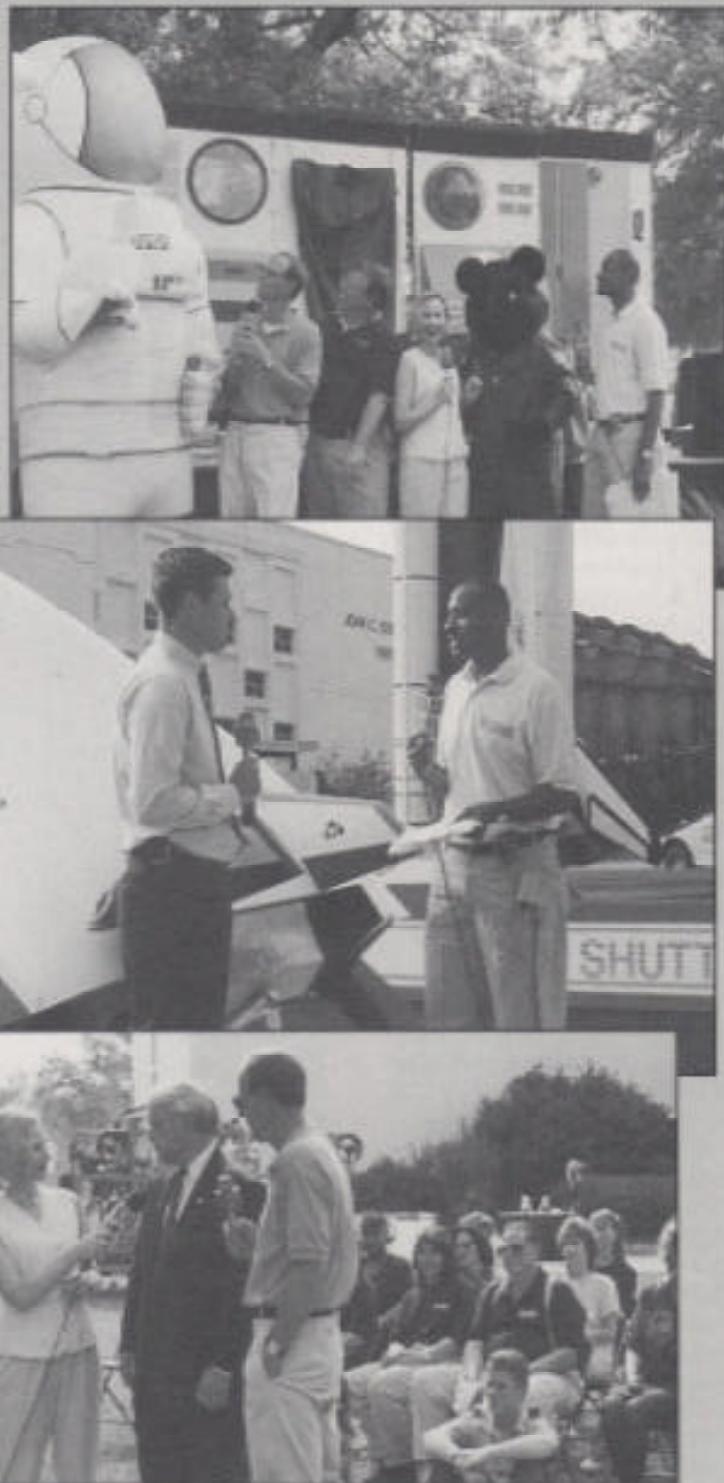
Mississippi State University engineering professors Robert Taylor and Randolph Follett integrated the two software programs under the direction of NASA's Steve Nunez, X-33 project manager, with support by NASA's Technology Transfer Office, Kirk Sharp. The combined software package has added significant module enhancements for testing rocket propulsion systems and components.

The benefits of this package are twofold: It provides better information to the engineer who designs test scenarios, which results in better testing of rocket engines and components. It also frees the experienced simulation expert from the day-to-day involvement of developing and exercising system simulations.

The software package allows the expert to focus on creating better models of individual components, which can then be introduced into the EASY/ROCETS program.

Modeling is traditionally performed by special simulation computer codes that are developed by modeling and simulation experts. However, because of the complex nature of the computer codes, the software developer must be directly involved when the codes are used on new systems. That puts a significant burden on the modeling experts, and it limits the access and options of the

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WLOX-TV visited SSC on May 20 and broadcast live as part of its "Celebrate Mississippi" program, which highlights attractions on the Gulf Coast. At top, pictured second from left, David Elliott, Mike Reader and Karen Abernathy, along with Al Showers, have a little fun with the inflatable astronaut and Astronaut Bear Extraordinaire (ABE). Middle, Showers talks with NASA's Patrick Scheoermann. In the bottom photo, WLOX anchors Abernathy, left, and Elliott, right, interview SSC Director Ray Estess. Dave Vincent, news director of WLOX-TV, called the live broadcast "...very successful. We had been wanting to feature Stennis Space Center for a long time."

Kailiwi-Barnett profiled on Web by Women in Technology

Women in Technology International (WITI) is profiling NASA's Florence Kailiwi-Barnett, director of the Center Operations and Support Directorate, was highlighted June 17 during 1998 Women in Science and Technology Month.

The purpose of WITI is threefold: to increase the number of women in executive positions, to help women become more financially independent and technologically aware, and to encourage young women to enter science and technology-oriented careers. One program designed to further these goals is Women in Science and Technology Month. Annually, this organization selects 30 women to be profiled in June, and each day a different woman is featured on the Internet at <http://www.witi.org>.

Kailiwi-Barnett's sister submitted a nomination application, and a selection committee chose it from a large pool. After being selected, Kailiwi-Barnett was required to answer a questionnaire to aid the group in writing the short biography which appeared on the organization's web site.

Past NASA women honored include Donna Shirley, Mars Exploration Program manager, and France Cordova, NASA chief scientist.

Kailiwi-Barnett began working at Stennis Space Center in February 1995. She manages the infrastructure of Stennis. In her own words, "Running a 'city' like Stennis Space Center covers everything from providing security services to designing and constructing high-tech rocket test facilities. Even though sometimes I feel I'm constantly running or juggling, the work is extremely dynamic and exciting."

Kailiwi-Barnett spoke of the advantages and disadvantages of being a woman in a technological field. While explaining disadvantages such as occasional communication challenges with colleagues whose perspectives, experiences and opinions are quite different from her own, she enumerated the significant benefits, such as increasing diversity and leading or participating in positive changes. To young women, Kailiwi-Barnett advises, "Welcome the unknown with open arms, look at everything as an opportunity to learn and grow, and be excited about your life and your life pursuits."

Women in Technology International has more than 6,000 members, 95 percent of whom are women in technological fields.



Lisa Gauthier, left, an exercise specialist with the SSC Wellness Center, supervises Capt. Larry Warrenfeltz of NAVOCEANO as he works out. The Wellness Center provides services to all employees of Stennis Space Center.

Wellness Center helps SSC employees stay fit

The Wellness Center, like the Employee Assistance Program, is part of Occupational Health Services, which is directed by Dr. Maurice Taguano. Wellness Center services are offered to employees of any agency at Stennis Space Center.

The 6,500-square-foot fitness facility boasts state-of-the-art fitness equipment as well as a highly qualified staff that supervises members' fitness program and helps them achieve their goals.

"We have been here for about six years," said Scott Burks, Wellness Center director. "In fact, we're building next door a 25-yard, three-lane, four-feet deep, exercise lap pool. It will be completed in about a month."

The center has all the features of other, larger and more expensive fitness centers. It has separate men's and women's locker rooms, saunas and showers.

There is also a full-size aerobics studio where regularly scheduled aerobics classes are held. "We have a class schedule out front," said Burks. "Some people come in here and do karate, jump rope, stretching, whatever."

The main focus of the building is the fitness area. Located in this large open space are many high-tech fitness machines to work out any part of the body. The usual assortment of machines, ranging from variable resistance weight machines to treadmills, stationary bicycles, rowing machines and stairclimbers are available. In one corner of the fitness area is a freeweight area with dumbbells and barbells.

Exercisers who prefer getting somewhere while they walk will enjoy the quarter-mile walking track behind the building. Future plans call for a basketball court next to the track for people who like to get their exercise while shooting hoops. Burks also hopes to have lighting installed around the track for late afternoon use during the fall.

For an initial wellness evaluation and orientation fee of \$25, the new member will undergo a short assessment of his/her physical condition. The wellness assessment consists of a series of measurements of strength, muscular endurance and cardiorespiratory fitness, and a blood lipid profile, which determines coronary risk.

Monthly events and activities are also used to reinforce good physical fitness habits. Once a month, lipid (cholesterol) screenings are available for members and nonmembers for \$15.

Stress Prevention and Wellness Week at SSC will be July 6 through July 10. During that time, a free one-week membership will be available to all SSC employees who are nonmembers as a "test-drive" to find out how the Wellness Center can help achieve individual fitness goals.

The Wellness Center is open Monday through Friday from 6 a.m. until 7 p.m., and an exercise physiologist is available to assist members and supervise their exercise programs. For more information or to take a tour of the SSC Wellness Center, call Ext. 3950.

Geiger has experience needed to lead Rocketdyne at Stennis

A program that tests the main engine for the Space Shuttle and new engines for future space transportation vehicles involves approximately 275 Rocketdyne employees at Stennis Space Center.

It requires someone with a broad working experience in the aerospace industry to manage a project this large. Dave Geiger of Long Beach, is just the individual to get the job done.

Geiger is the SSC Site Director of the Boeing Company, Rocketdyne Propulsion and Power. "That means I'm responsible for everything Boeing does here on site," he said.

Boeing conducts propulsion testing at Stennis for NASA.

The Boeing team currently is performing development, certification and acceptance testing of the Space Shuttle Main Engine and process validation of all flight hardware processes for use at Kennedy Space Center. In addition, the team is supporting facility preparations and checkout for the new Boeing Linear Aerospace engine that will power the X-33 technology demonstrator and the new NASA Low Cost Technology demonstrator engine, both scheduled to start testing later this year.

While Geiger ensures that processing and testing is conducted in a safe, reliable and efficient manner, he is also an advocate for Stennis Space Center.

"I am the marketeer, if you will, of Stennis to Boeing," Geiger said. "The

"There is a lot of capability here, not only with the facilities, but also in the individuals that can be tapped."

Dave Geiger



SSC Employee Profile



radioactive elements.

Geiger started working for the Rocketdyne Division of Rockwell International (acquired by Boeing in December 1997) in Canoga Park, Calif., in 1985 as the director of safety and mission assurance for the Space Shuttle Main Engine program.

In January 1996, Geiger arrived at Stennis Space Center as the Resident Manager and Test Director, which was later shortened to the title he holds today of Site Director.

At Stennis, Geiger enjoys the people that he works with every day.

"I like working with a great bunch of folks," he explained. "They are a very genuine, very enthusiastic and very professional people here. The best part of my job is the time I get to spend with school children as part of the Boeing Education Outreach Programs."

Geiger believes in the future of SSC and its people. "There is a lot of capability here, not only with the facilities, but also in the individuals that can be tapped."

Geiger and wife Stephanie have two sons, Nick, 18, and Chris, 12.



Editor's note: As part of Stennis Space Center's celebration of the 40th Anniversary of the National Aeronautics and Space Administration, the Lagniappe will publish monthly throughout 1998 significant dates in NASA's history.

April 12, 1981 — The maiden voyage of the reusable Space Shuttle took place when Columbia was launched from Kennedy Space Center with Astronauts

John Young and Robert Crippen at the controls.

May 11, 1984 — National Space Technology Laboratories held its grand opening for a new Visitors Center, which featured a "Hall of Achievements" addition to the existing Central Control Building and a new theme for the center: "Exploring Space-Oceans-Earth."

August, 1985 — The Mississippi Institute of Technology Development (ITD) received one of five NASA grants for "research to promote and stimulate space technology commercial application." The ITD established the Space Remote Sensing Center (SRSC) at NSTL.

July 10, 1986 — The "White Paper," drafted by a handful of experienced NSTL engineers, advocated NASA's return to a more active role and strong commitment to a ground test capability. The document proved to be a guide for NSTL in its pursuit to gain acceptance as NASA's Center of Excellence for Rocket Propulsion Testing.

June 11, 1987 — The Mississippi Technology Transfer Center was dedicated. This \$4.5 million facility was built by the State of Mississippi at NSTL for the purpose of sharing the diverse technology developed at the facility by NASA and its many resident agencies.



U.S. Congressman Gene Taylor, D-Miss., speaks to members of the Positive Influences Chapter of the National Management Association at Stennis Space Center. The Congressman was the guest speaker at the association's monthly luncheon June 15.



The Association for Cultural Awareness at SSC celebrated Asian/Pacific Islander American Month May 28 in front of the cafeteria in Building 1100. Pictured above, Denise Dedeaux and Paula Oliver invite Terry Tate to sample some Chinese food. The association's exhibit included Asian and Pacific Islander artifacts provided by the University of Southern Mississippi's International Studies Department.

NASA researches Mexican fires

Since the beginning of the Mexican fires in late March and early April of this year, atmospheric researchers at NASA using the Total Ozone Mapping Spectrometer (TOMS), have been closely monitoring the fires and the smoke aerosols emitted by the fires.

TOMS obtains daily images of the amount of smoke present in the atmosphere anywhere in the world.

Scientists have a keen interest in smoke aerosols generated by fires like those in Mexico because smoke contributes to the overall global air pollution levels that can impact the quality of air that humans breathe. Residents of Texas have been issued warnings to remain indoors to avoid adverse health impacts, such as asthma, from the smoke. Increased smoke concentration from human-induced fires could contribute to global climate change.

The fires started in southern Mexico and northern Guatemala near the end of March 1998. Though most of the fires were started as part of the annual clearing of agricultural fields, some started naturally because of the extremely dry conditions. The dry conditions are associated with the El Niño weather patterns similar to those that caused the fires in Indonesia earlier this year.

The smoke was sufficiently thick, easily visible on the ground and resembled a light haze to medium fog in parts of Texas, Georgia and Florida, Herman said. On May 16 the smoke plume extended across the Eastern U.S., passing through Ohio, and into Southern Canada.

Because of the difficulties in extinguishing the fires, the large smoke plumes are still present in Mexico. The smoke tends to extend from the ground up to an altitude of about three kilometers (1.8 miles) and follow the prevailing winds. Due to wind shear in this altitude range, there is frequently more than one plume, with smoke blowing from west to east and from south to north. With prospects of rain slim due to the El Niño-driven drought, scientists believe the smoke may linger for a long time.

Meanwhile, space observations can document such events as the highly unusual transport of large amounts of dust from China (Gobi desert) across the Pacific Ocean and striking parts of the Western U.S., and the smoke from Canadian fires in the Pacific Northwest.

TOMS is part of NASA's Earth Science

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Five SSC employees were honored last month with NASA's Space Flight Awareness Award. Pictured from left are Johnson Controls World Services' Les Braun, Boeing's Carey Miller, Lockheed Martin Stennis Operations' John Davis, NASA's Harold Taubee and Boeing's Henry Johnston. As part of their recognition, honorees traveled to Florida to view the liftoff of STS-91. The Space Flight Awareness program was established to prevent human error by instilling in civil service and contractor employees an awareness of personal responsibility for shuttle mission success and motivating the exemplary performance necessary to achieve this mission.



Caroline Kirk and Aaron Allen, children of Stennis Space Center's launch guests, give each other a "high-five" after a successful liftoff. Well over 100 community leaders, mainly from Mississippi and Louisiana, traveled to Florida to view the STS-91 launch.

Emergency warnings to motorists may save many lives

A new traffic technology can warn motorists quickly of rapidly approaching emergency vehicles and trains. The Emergency Vehicle Early Warning Safety System, or E-VIEWS, developed with the assistance of the Technology Affiliates Program at NASA's Jet Propulsion Laboratory, Pasadena, Calif., is particularly timely given the increasing incidence of police chases.

As the vehicles approach the intersections, signal lights turn yellow, then red, for cross-traffic, and approaching drivers also view flashing vehicle symbols on the visual displays.

These active displays, linked to the receivers, inform drivers of the direction from which emergency traffic is approaching or departing the intersection. The vehicle symbols appear to move across the displays, synchronized with the actual emergency vehicles' movements.

E-VIEWS is now being further refined with an eye toward installation of demonstration models in large metropolitan areas.

FIRE...

(continued from Page 8)

strategic enterprise, a long-term, coordinated research effort to study the Earth as a global system. The TOMS program is managed by the Goddard Space Flight Center for NASA's Office of Earth Science, Washington, DC.

SPACE STATION...

(continued from Page 3)

The International Space Station partners set an April 1999 target launch date for the Russian Service Module. The first station crew will be launched aboard a Russian Soyuz spacecraft in summer 1999 to begin a five-month inaugural stay. Launch of the U.S. Laboratory module is set for October 1999. Launches of other laboratory modules, provided by Europe, Japan and Russia, will take place later. Scientific research will begin aboard the station early in the year 2000.

TECHNIQUES...

(continued from Page 5)

model to the applications engineer.

The EASY/ROETS simulation package was created to overcome this problem. The objective was to provide a modular, easily modified platform for simulating and analyzing dynamic cryogenic fluid flow.

Some modules imported from ROETS and that have since been developed include test facility plumbing (inn tanks, valves, filters), property tables, heat exchanger flow and heat exchanger volume; turbomachinery; hot gases; simple actuators and control loops.

LAGNIAPPE

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QUICK LOOK

■ The SSC Recreation Association Gun and Archery Club is taking applications for new members. The club features education, training and several monthly competitions on its rifle, pistol and skeet ranges. For more information, call Kevin Dial at (228) 688-8009 or Michael Satter at Ext. 2575.

■ Stress Prevention & Wellness Week will be held July 6-10. This is a collaborative effort between the Employee Assistance Program and the SSC Wellness Center. An exhibit will be on display in Building 1100 in front of the main cafeteria with handouts on identification of stress/burnout, relaxation, coping and stress reduction exercises as well as benefits inherent in the role of exercise and physical wellness.

■ The Stennis Space Center Visitors Center has kicked off its 1998 Summer Reading Program. 21 sessions are scheduled at area libraries and Vacation Bible Schools. The Summer Reading Program is free and open to all children in grades K-6. For more information, call SSC at (228) 688-2370 or 1-800-237-1821 and select option one (in Louisiana and Mississippi.)

HURRICANE...

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conditions that are declared based on when the National Weather Service warns that destructive force winds are expected to reach the area:

Condition 4 (Alert) - Storm expected to hit within 72 hours. A general state of readiness will be assumed and the SSC Emergency Operations Center (EOC) will open on a limited basis as required.

Condition 3 (Alert) - Storm expected to hit within 48 hours. The majority of storm preparations should be accomplished during this period. The EOC will be opened.

Condition 2 (Emergency) - Storm expected to hit within 24 hours. Final emergency preparations will be completed and the state of readiness reported to the SSC emergency director. Conditions will be assessed and decisions will be made regarding employee dismissal and site closure. The EOC will assume 24-hour operations.

Condition 1 (Emergency) - Storm expected to hit within 12 hours. Shelters will be opened for employees and their dependents.

Employees and their dependents will usually be assigned to shelters in the employees' normal work area. If their area has not been designated as a shelter, they will be assigned to one.

Primary Shelters will be located in Buildings 1100, 2101, 2204, 2201, 1000, 1002 and 1005. Backup Shelters will be located in Buildings 1105, 1200, 8100, 2105 and 4995.

For information about the availability of shelters during a hurricane, call the SSC Emergency Operations Center at Ext. 3777.

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